



MATERNAL OUTCOME IN PREGNANCIES WITH INTRAUTERINE GROWTH RESTRICTION

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ABSTRACT

Objectives: Aim of our study was to determine the distribution of the risk factors and the etiological factors and to determine the maternal morbidity associated with pregnancies with IUGR. **Methodology :**

A Prospective observational study was conducted by collecting the data from the medical records of 200 consecutive consenting subjects admitted in a tertiary health care centre of South Gujarat over a period of 1 year after HREC approval.

Results : The risk factors that are associated with IUGR are lower socio economic class, low BMI, insufficient weight gain during pregnancy, Hypertensive disorder of the pregnancy, anemia and sickle cell disease. A significant majority (63%) of the subjects are from lower socio economic class. 25% of subjects are underweight with BMI of < 18.5 . 63% of the subjects have insufficient weight gain (< 10 kg). Hypertensive disorders of pregnancy (39%), nutritional anemia (21%), and sickle cell disease (8%) are the most prevalent risk factors among the 200 subjects in our study. Of these 200 subjects, 58% underwent LSCS, while 42% had vaginal delivery, out of which total 57% were Pre term Deliveries. **Conclusion :** In study we conducted, LSCS rate is higher in subjects with IUGR (58%) as compare to overall patients coming to our Labor room (36%) at our Centre. The p-value is (≈ 0.0001) significantly less than 0.05, indicating that there is a statistically significant difference in the mode of delivery between the Present Study and total number of deliveries at our Centre, which leads to hospital stay ≥ 5 days which is more duration than in over all patients coming to Labor room at our Centre suggestive of increased maternal morbidity in patients with IUGR. Improving maternal nutritional status, early registration in 1st trimester, frequent antenatal visits, Quality ANC care, correction of anemia, identifying and treating cases of Hypertensive disorders of Pregnancy help in reduction of maternal morbidity.

KEYWORDS : Body mass index, Pregnancy induced Hypertension, Lower segment Caserean Section.

INTRODUCTION

Intrauterine growth restriction (IUGR) refers to a condition in which a fetus fails to achieve its growth potential in the uterus, leading to a smaller than expected size for gestational age. This condition poses significant challenges for both the fetus and the mother, impacting various aspects of their health and well-being. Understanding the fetomaternal outcomes in IUGR pregnancies is crucial for effective management and intervention. (1) The "normal" neonate is the one whose birth weight is between the 10th and 90th percentile as per the gestational, age, gender and race with no feature of malnutrition and growth retardation.

The terms "IUGR" and "small for gestational age (SGA)" have been used synonymously in medical literature, but there exist small differences between the two. Prenatal recognition of fetal growth restriction (FGR) is a major factor identified in strategies aimed at preventing stillbirth, in which up to 30% of cases are associated with FGR or small-for-gestational age (SGA) in the late third trimester. Fetal size is determined through biometric evaluation of the head circumference, biparietal diameter, abdominal circumference (AC) and femur length and/or derivation of estimated fetal weight (EFW) computed by different formulae. The most common definition of SGA is EFW or AC below the 10th percentile of given reference ranges. To distinguish FGR from SGA and to improve the detection rates of FGR and its complications compared with the use of biometric measurements alone we include sequential ultrasound measurements focusing on declining/crossing growth centiles, functional parameters such as Doppler waveform analysis (umbilical artery (UA), fetal middle cerebral artery and ductus venosus). Nevertheless, other thresholds have been described, such as

the 5th and 3rd percentiles (the latter approximating to 2 SD) or a Z-score of -2 . FGR is a condition that is frequently, but unhelpfully, defined as the fetus failing to reach its genetically predetermined growth potential. The main distinction between SGA and FGR is that a SGA fetus may be small but not at increased risk of adverse perinatal outcome, while a fetus with size above the 10th percentile may be FGR and at increased risk of adverse perinatal and long-term outcome. (2) Fetal growth depends on several factors, including uteroplacental function, maternal disease, maternal cardiovascular function or cardiac disease, maternal nutrition, altitude, smoking and illicit drug use, and presence of pathological conditions, such as infection, aneuploidy and some genetic conditions. (3) However, uteroplacental insufficiency or dysfunction represents one of the most frequent causes of abnormal growth in an otherwise normal fetus.

Impaired fetal growth is associated with an increased risk of perinatal mortality and morbidity, and long-term adverse infant outcome.

Materials And Methodology

This prospective observational study was done at Obstetrics and Gynaecology Department in tertiary health care Centre of South Gujarat over 1 year period after obtaining approval from Ethical committee.

Number Of Patients

All consecutive consenting women having Intrauterine growth restriction in Antenatal, Intranatal and Postnatal period admitted (Approx 200 patients) to Obstetrics Department of Tertiary care hospital will be enrolled in this study after permission from ethical committee at tertiary health care

centre of South Gujarat.

Inclusion Criteria

All consenting women who had delivered baby with EFW <= 10 percentile with Doppler changes or EFW <3 percentile same gestational age in labour room of our centre.

Exclusion Criteria

- 1) Non consenting patients in labour room with IUGR.
- 2) Brought IUFD

RESULTS AND DISCUSSION

Among the baseline variables analysed, salient features of this study were:

- Patients aged 20-25 years (48%) are most affected by IUGR.
- A higher proportion of patients around 66% are from rural areas.
- IUGR cases are most common among individuals with primary education (62.5%).
- The majority of IUGR cases are among housewives, who make up 90% of the subjects.
- A significant majority (63%) of subjects are from the lower socio-economic class, which is typically associated with higher risks of Intrauterine Growth Restriction (IUGR).

We studied various antenatal variables; salient features of this study were:

- 55% of patients are primigravida and the remaining 45% are multigravida.
- 25% of subjects are underweight (BMI < 18.5), which increases the risk of Intrauterine Growth Restriction (IUGR).
- Insufficient weight gain (<10 kg) is associated with an increased risk of 63 % IUGR.

Table No 1 : Demographic Parameters

Baseline Variables	No of Patients (n=200)	Percentage
Age		
<20	39	19%
20-25	96	48%
26-30	51	26%
>30	14	7%
Socioeconomic Class		
Lower class	126	63%
BMI		
<18.5	51	25%
18.5-24.9	123	61%
25-29.9	23	12%
Maternal weight gain during Pregnancy		
<10 kg	126	63%
10-15 kg	74	37%
Parity		
Primigravida	109	55%
Multigravida	90	45%

- Hypertensive disorders of pregnancy (39%), nutritional anaemia (21%), and sickle cell disease (8%) are the most prevalent risk factors among the 200 patients.

Table no 2 : Risk Factors

Risk Factors		
Sickle cell disease	16	8%
DM	12	6%
Hypertensive disorders of pregnancy	78	39%
Twin pregnancy	10	5%
Grades of Anemia		
Mild Anemia	29	50%

Moderate Anemia	11	18%
Severe Anemia	18	32%
Hypertensive disorders of pregnancy		
Mild Pre-eclampsia	51	65%
Severe Pre-eclampsia	18	24%
Chronic HTN	9	11%

We studied various Intranatal variables, salient features of this study were:

- Among the 200 patients, 58% underwent LSCS, while 42% had vaginal delivery.
- In the present study of 200 patients, 58% had vaginal delivery (32% preterm and 26% term), while 42% had LSCS (25% preterm and 17% term).

Table no 3: Mode of Delivery

Mode of delivery		
Vaginal Delivery	84	42%
A) Preterm Vaginal delivery	50	25%
B) Term Vaginal delivery	34	17%
LSCS	116	58%
A) Preterm LSCS	64	32%
B) Term LSCS	52	26%

- Among the 42 patients who had LSCS, 42% were due to fetal distress, 22% had a previous CS, 16% were due to severe oligohydramnios with an unfavorable cervix, and 20% were for other reasons.

We have compared our study with multiple studies like Parul Shukla et al 10.21276/obgyn.2023.10.1.34 , Singh G et al (4), Frederick Satiro Vaz , Plos One 2019;14(2), Sinha S et al , Curr Health Sci J.2018 , Frank a Manning AJOG 1981 , Chelli, S. B., Nagaraj , Mounika et Int j 2022 , . In which results are comparable.

Table no 4 : Indication of LSCS

Indication of LSCS	No of Patients (n= 116)	Percecntna ge
Malpresentation	8	7%
Antepartum Fetal Compromise (fetal doppler changes)	22	18%
Fetal distress in labour	29	25%
Meconium-Stained Liquor	16	13%
Previous Caeserean Section	27	22%
Oligohydramnios with unfavourable cervix	14	12%

CONCLUSION

- After doing this study, it can be concluded that pregnancy with Intrauterine growth restriction is associated with Increase maternal morbidity.
- In our study , 55% of the patients were Primigravida. During antenatal period 63% of these patients showed weight gain of <10 kg during pregnancy.
- Majority of the patients had associated Hypertensive disorder of pregnancy around 39% and 21% of the patients had associated nutritional anemia of which 32% had severe anemia Hemoglobin <7 gm%.
- Anemia, PIH, sickle cell disease, weight gain< 10 kg are common risk factors seen in Pregnancy with IUGR.

In present study, LSCS rate is higher in patients with IUGR (58%) as compare to overall patients coming to our Labor room (36%) ,The p-value is (≈0.0001) significantly less than 0.05, indicating that there is a statistically significant difference in the mode of delivery between the Present Study and total number of deliveries at our Centre. The most common cause of LSCS being Fetal distress in labor and Antepartum Fetal compromise. This leads to hospital stay >= 5 days which is more duration than in over all patients coming

to LR suggestive of increased maternal morbidity in patients with IUGR.

REFERENCES:

1. Williams Obstetrics, 25th Edition - Cunningham, F. Gary, et al. McGraw-Hill Education, 2018.- Chapter on fetal growth disorders including IUGR.
2. ISUOG Guidelines by ultrasound *Obstet Gynecol* 2020;56:298-312.
3. American College of Obstetricians and Gynecologists. ACOG Practice bulletin no. 134: fetal growth restriction. *Obstet Gynecol.* 2013;121:1122-33.
4. Singh A, Ambujam K. Maternal socio-demographic determinants and fetal outcome of intrauterine growth restriction. *Int J Reprod Contracept Obstet Gynecol.* 2018;7:3843-3847.